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# Purse-Seine Surveys of Post-Larval Lingcod (*Ophiodon elongatus*) in the Strait of Georgia, 1989-90

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# PURSE-SEINE SURVEYS OF POST-LARVAL LINGCOD (*OPHIODON ELONGATUS*) IN THE STRAIT OF GEORGIA, 1989-90

by

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## ABSTRACT

Hand C. M., and L. J. Richards. 1991. Purse-seine surveys of post-larval lingcod (*Ophiodon elongatus*) in the Strait of Georgia, 1989-90. Can. Manuscr. Rep. Fish. Aquat. Sci. 2106: 23 p.

Purse-seine surveys of post-larval lingcod were conducted in May 1989 and May 1990, near Nanaimo in the Strait of Georgia, British Columbia. Peak densities reached 2543 lingcod/km$^2$ in 1989 and 588 lingcod/km$^2$ in 1990. These densities were significantly lower than the density obtained from the 1980 survey at the same sites. However, lingcod tended to be caught at a larger size in 1989-90, and the differences may simply reflect sampling problems. Low densities were also obtained in 1975-76 and 1981 surveys. Because of the large sample variance, purse-seine surveys are a poor method for monitoring lingcod abundance.

## RÉSUMÉ

Hand C. M., and L. J. Richards. 1991. Purse-seine surveys of post-larval lingcod (*Ophiodon elongatus*) in the Strait of Georgia, 1989-90. Can. Manuscr. Rep. Fish. Aquat. Sci. 2106: 23 p.

Des campagnes de dénombrement de morues-lingues post-larvaires utilisant une seine coulissante ont été menées en mai 1989 et 1990, près de Nanaimo dans le détroit de Géorgie, en Colombie-Britannique. Les densités maximales observées étaient de 2 543 morues-lingues/km$^2$, en 1989, et de 588 morues-lingues/km$^2$, en 1990. Ces densités sont nettement inférieures à celles obtenues au même endroit en 1980. Cependant, la taille des morues-lingues capturées en 1989-1990 était supérieure; les différences observées entre ces périodes sont donc peut-être simplement attribuables à des problèmes d'échantillonnage. De faibles densités avaient également été obtenues lors des campagnes de 1975-1976 et 1981. En raison de la grande variance des échantillons, les campagnes utilisant une seine coulissante s'avèrent une mauvaise méthode pour surveiller les abondances de morue-lingue.

# INTRODUCTION

Lingcod (*Ophiodon elongatus*) have been heavily exploited in the Strait of Georgia, British Columbia, since the early 1900s (Cass et al. 1990). Catches of over 2000 t occurred regularly through the 1940s. Since the 1950s, however, catch, effort, and size of the fishing fleet have decreased. The 1989 commercial catch was only 74 t and the recreational catch was approximately 84 t (Richards and Hand 1991). A number of management strategies have been adopted to prevent further stock declines and to rebuild depleted stocks. A winter closure to commercial fishing and a size limit of 58 cm was in effect as early as 1940. In 1979, the closed season was extended by two months and then, in 1988, by another 2 weeks, from November 15 to April 30. In 1990, commercial lingcod fishing was prohibited in the majority of the Strait of Georgia (statistical areas 13-19, 28, 29).

With the loss of commercial fishery statistics in 1990, other methods are required for monitoring lingcod abundance. In 1989, a program began to evaluate potential monitoring strategies. Three types of surveys were initiated: (1) a SCUBA survey of lingcod nests; (2) a purse-seine survey of post-larval lingcod; and (3) surveys of juvenile lingcod. The purpose of this report is to summarize the results of post-larval surveys conducted in May 1989 and May 1990. Similar surveys were conducted in 1975-76 (Phillips and Barraclough 1977) and 1980-81 (Cass and Scarsbrook 1984).

Lingcod biology is reviewed by Cass et al. (1990). Briefly, lingcod migrate to shallow reef areas in December and January and lay their eggs in adhesive masses in rock crevices. Male lingcod guard the nests until the eggs hatch in 5-11 weeks. In the Strait of Georgia, most of the nests hatch during March and April (Low and Beamish 1978). Newly hatched lingcod larvae are initially dispersed by currents in surface waters. By May, they have moved inshore as pelagic post-larvae and concentrate in shallow areas. After a few weeks, they disappear from surface waters and become demersal. The goal of the purse-seine surveys was to sample the larvae while they were concentrated in shallow areas.

## METHODS

Purse-seine surveys were conducted near Nanaimo, in the southern Strait of Georgia (Fig. 1), during May 1989 and May 1990. All sites were sampled once in each week of the three-week study period. The 20 sites selected for the survey were a subset of the sites sampled during the 1980-81 surveys. Thus, the results from the 1980-81 and 1989-90 surveys should be directly comparable. The timing of the surveys was intended to bracket the buildup, peak, and decline of post-larval concentrations (Phillips and Barraclough 1977).

Unfortunately, the purse seine used in the 1980-81 surveys (275 m x 18 m purse seine, with a 5 mm stretched mesh bunt end) had deteriorated and was not useable for the 1989-90 surveys. In 1989, sampling was conducted from the R/V CALIGUS using a 210 m x 22 m purse seine, with a 6 mm stretched mesh bunt end. In 1990, sampling was conducted from the R/V CALIGUS using a 375 m x 25 m purse seine with a 5 mm stretched mesh bunt end. Site 2 at Brandon Island was not surveyed in 1990 because net depth exceeded water depth.

Catches of lingcod were preserved in 5% formalin and were later counted and measured for fork length by set. Measurements of large catches were collected from subsamples. The distribution of counts was highly skewed for sets during a one-week period. A ln(N+1) transform was applied to the raw counts for the calculation of weekly means and confidence intervals. Density calculations assumed that the length of the purse seine represented the circumference of the circle formed by the net during sampling.

## RESULTS

Numbers of post-larval lingcod caught during purse seining in 1989 and 1990 are given in Tables 1 and 2. There is little consistency in the counts from week to week at a site or in the ranking of the sites between years. For example, between May 8-12, 1989, the greatest number of post-larval lingcod were caught at site 9 (Malaspina Point). However, only three lingcod were caught at this site in the remaining two time periods. Sites 2, 3, 8, and 9 (Brandon Island, Five Fingers, McKay Point, and Malaspina Point) were the most productive in 1989. In 1990, site 17 (Lock Bay) was more than twice as productive as any other site.

In previous surveys, peak lingcod densities have generally occurred in the middle of May (Table 3). Similarly in 1989, peak densities occurred in the second sampling period, between May 15-19. In 1990, however, peak densities occurred in the first sampling period, between May 7-14. As densities were also lower in 1990, it is possible that the majority of the lingcod may have disappeared from the plankton before the beginning of the survey.

Peak post-larval densities were 2543 fish/km$^2$ in 1989 and 588 fish/km$^2$ in 1990. It is apparent from the 95% confidence intervals that peak 1989-90 densities were similar to peak densities in 1976 and 1981, and that peak 1989 densities were also similar to densities in 1975. The 1980 survey found the highest lingcod densities. Comparing sites that were sampled in each of the 1980, 1989, and 1990 surveys, peak densities from the 1980 survey were significantly greater than from the 1989 and 1990 surveys (Kruskal-Wallis test, $p<0.001$). In addition, peak densities in 1990 were significantly below those in 1989 (Wilcoxon test, $p=0.02$).

Because different nets were used in each of the recent surveys, some of the between-survey differences may be accounted for by gear selectivity. In the 1980 survey, length-frequency distributions (Fig. 2) indicate a clear progression in modal size between sampling periods. At the time of peak densities, the modal size was 35 mm. Lingcod of this size were rarely caught in 1989 (Fig. 3) or 1990 (Fig. 4), although the mesh size used in 1980 was identical to that used in 1990. Length-frequency information by set is listed in Appendix Table 1.

Lingcod length-frequency distributions in 1989 and 1990 were similar, in spite of differences in mesh size. Both 1989 and 1990 distributions were suggestive of two periods of lingcod hatching. For the May 8-12, 1989 period, there were modes in the size distribution at 45 and 65 cm. The larger mode disappeared in subsequent periods while the smaller mode increased in size to 55 and 65 cm. For the May 7-14, 1990 period, there was a single mode at 55 cm. By the May 14-18, 1990 period, a smaller mode had appeared at 50 cm. Thus, differences between 1980 and 1989-90 could simply reflect a prolonged hatching period and the inability of the net to sample lingcod smaller than 40 cm.

To enable more meaningful comparisons between 1980, 1989, and 1990 surveys, we computed mean densities for large lingcod (≥50 mm) (Table 4). Lingcod of this size appeared to be adequately sampled in at least one of the May sampling periods. Furthermore, we only included densities from the 19 sites that were surveyed in all three years. Although peak densities by this method were greater in 1980 than in 1989, the differences were no longer significant (Wilcoxon test, $p>0.1$). However, densities in 1990 were significantly lower than in 1980 or 1989 (Kruskal-Wallis test, $p=0.01$).

## DISCUSSION

These results suggest that post-larval surveys are a poor method for monitoring changes in lingcod abundance. Among-site variances were large for each sampling period in each year. In addition, density at a given site varied inconsistently among sampling periods and years. Difficulties in precisely repeating the surveys in different years complicated the interpretation. For example, different nets were used in different years, and a different vessel and crew participated in the 1989-90 surveys. Furthermore, the timing and duration of larval hatching obviously varied among years.

The post-larval surveys indicated minor differences only in lingcod densities since 1975. However, based on commercial catch statistics (Richards and Hand 1991) and adult lingcod surveys (Hand and Richards 1989), there have been substantial decreases in abundance over this period. It is unclear how to reconcile these sources of information. It is possible that large annual changes in larval lingcod abundance have occurred, but are not accurately sampled by the surveys. For example, changes in abundance could affect distribution more than density at a given site. Alternatively, adult lingcod densities may have been relatively stable in the region of the surveys. It is hoped that juvenile surveys will provide a better method for monitoring lingcod populations.

## ACKNOWLEDGEMENTS

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Table 1. Numbers of post-larval lingcod caught with a 210 m purse seine in the Strait of Georgia in May 1989, by site and sampling period.

| Site Number | May 8-12 | May 15-19 | May 23-25 | Total |
|---|---|---|---|---|
| 1 | 0 | 17 | 2 | 19 |
| 2 | 53 | 83 | 37 | 173 |
| 3 | 0 | 141 | 8 | 149 |
| 4 | 18 | 7 | 3 | 28 |
| 5 | 87 | 10 | 1 | 98 |
| 6 | 0 | 23 | 0 | 23 |
| 7 | 3 | 2 | 25 | 30 |
| 8 | 0 | 136 | 0 | 136 |
| 9 | 120 | 2 | 1 | 123 |
| 11 | 30 | 56 | 5 | 91 |
| 12 | 0 | 5 | 0 | 5 |
| 13 | 1 | 5 | 5 | 11 |
| 14 | 16 | 0 | 6 | 22 |
| 16 | 0 | 3 | 5 | 8 |
| 17 | 14 | 47 | 6 | 67 |
| 19 | 9 | 4 | 0 | 13 |
| 20 | 0 | 10 | 0 | 10 |
| 21 | 0 | 0 | 9 | 9 |
| 25 | 37 | 3 | 20 | 60 |
| 26 | 2 | 1 | 12 | 15 |
| Total | 390 | 555 | 145 | 1090 |

Table 2. Numbers of post-larval lingcod caught with a 375 m purse seine in the Strait of Georgia in May 1990, by site and sampling period.

| Site Number | May 7-14 | May 14-18 | May 21-25 | Total |
|---|---|---|---|---|
| 1 | 9 | 3 | 0 | 12 |
| 2 | - | - | - | - |
| 3 | 32 | 36 | 0 | 68 |
| 4 | 20 | 10 | 0 | 30 |
| 5 | 0 | 3 | 0 | 3 |
| 6 | 0 | 1 | 1 | 2 |
| 7 | 47 | 7 | 11 | 65 |
| 8 | 63 | 10 | 2 | 75 |
| 9 | 70 | 4 | 4 | 78 |
| 11 | 15 | 10 | 4 | 29 |
| 12 | 0 | 3 | 6 | 9 |
| 13 | 5 | 10 | 0 | 15 |
| 14 | 0 | 1 | 1 | 2 |
| 16 | 23 | 0 | 1 | 24 |
| 17 | 191 | 15 | 0 | 206 |
| 19 | 0 | 5 | 0 | 5 |
| 20 | 0 | 0 | 0 | 0 |
| 21 | 0 | 5 | 0 | 5 |
| 25 | 3 | 5 | 2 | 10 |
| 26 | 4 | 5 | 0 | 9 |
| Total | 482 | 133 | 32 | 647 |

Table 3. Mean post-larval lingcod densities per set and per $km^2$ and the corresponding 95% confidence intervals, determined from purse-seine surveys in the Strait of Georgia, 1975-90.

| Sampling Period | Lingcod per set | 95% C.I. | Lingcod per $km^2$ | 95% C.I. |
|---|---|---|---|---|
| | | 1975 Survey | | |
| May 5-7 | 4.8 | 2.2-10.3 | 1371 | 629-2943 |
| May 12-15 | 17.2 | 5.8-51.0 | 4914 | 1657-14571 |
| May 21-22 | 3.7 | 1.0-13.2 | 1057 | 286-3771 |
| May 27-30 | 3.4 | 1.7-6.8 | 971 | 486-1943 |
| | | 1976 Survey | | |
| May 3-4 | 0.8 | 0.5-1.3 | 229 | 143-371 |
| May 10-11 | 0.4 | 0.3-0.6 | 114 | 89-171 |
| May 18-20 | 3.1 | 1.3-7.5 | 886 | 371-2143 |
| May 25-June 3 | 0.1 | 0.7-0.8 | 28 | 20-229 |
| | | 1980 Survey | | |
| April 21-23 | 5.9 | 2.0-17.6 | 1000 | 338-2983 |
| April 30-May 2 | 21.6 | 12.8-36.4 | 3661 | 2169-6170 |
| May 7-8 | 19.2 | 7.8-47.1 | 3254 | 1322-7983 |
| May 13-17 | 60.3 | 28.8-126.4 | 10220 | 4881-21424 |
| May 21-28 | 13.0 | 6.7-25.3 | 2203 | 1136-4288 |
| May 31-June 6 | 1.2 | 0.8-1.8 | 203 | 136-305 |
| | | 1981 Survey | | |
| May 7 | 8.7 | 3.0-23.8 | 1475 | 536-4036 |
| May 15-16 | 30.4 | 8.4-110.5 | 5152 | 1423-18729 |
| May 27-28 | 1.9 | 1.0-3.9 | 322 | 169-661 |
| | | 1989 Survey | | |
| May 8-12 | 4.9 | 2.2-11.2 | 1405 | 616-3204 |
| May 15-19 | 8.9 | 4.4-18.2 | 2543 | 1250-5175 |
| May 23-25 | 4.0 | 2.4-6.8 | 1150 | 684-1933 |
| | | 1990 Survey | | |
| May 7-14 | 7.1 | 3.0-16.8 | 588 | 248-1396 |
| May 14-18 | 5.5 | 3.5-8.5 | 458 | 295-712 |
| May 21-25 | 1.9 | 1.3-2.8 | 156 | 106-230 |

Table 4. Mean densities of large (≥50 mm) post-larval lingcod per set and per km² and the corresponding 95% confidence intervals for 1980, 1989, and 1990, determined from the 19 sites that were surveyed by purse seine in all three years.

| Sampling Period | Lingcod per set | 95% C.I. 95% | Lingcod per km² | 95% C.I. |
|---|---|---|---|---|
| | | 1980 Survey | | |
| May 7-8 | 1.3 | 1.0-1.7 | 219 | 169-283 |
| May 13-17 | 12.0 | 4.6-31.4 | 1997 | 764-5220 |
| May 21-28 | 15.7 | 6.8-36.3 | 2603 | 1124-6028 |
| | | 1989 Survey | | |
| May 8-12 | 3.8 | 1.9-7.8 | 1080 | 527-2210 |
| May 15-19 | 8.7 | 4.3-17.5 | 2479 | 1129-5001 |
| May 23-25 | 4.0 | 2.4-6.7 | 1139 | 678-1912 |
| | | 1990 Survey | | |
| May 7-14 | 6.0 | 2.6-13.8 | 503 | 229-1146 |
| May 14-18 | 4.4 | 2.9-6.7 | 369 | 244-557 |
| May 21-25 | 1.9 | 1.3-2.7 | 155 | 106-222 |

Figure 1. Location of survey sites near Nanaimo, in the Strait of Georgia, British Columbia.

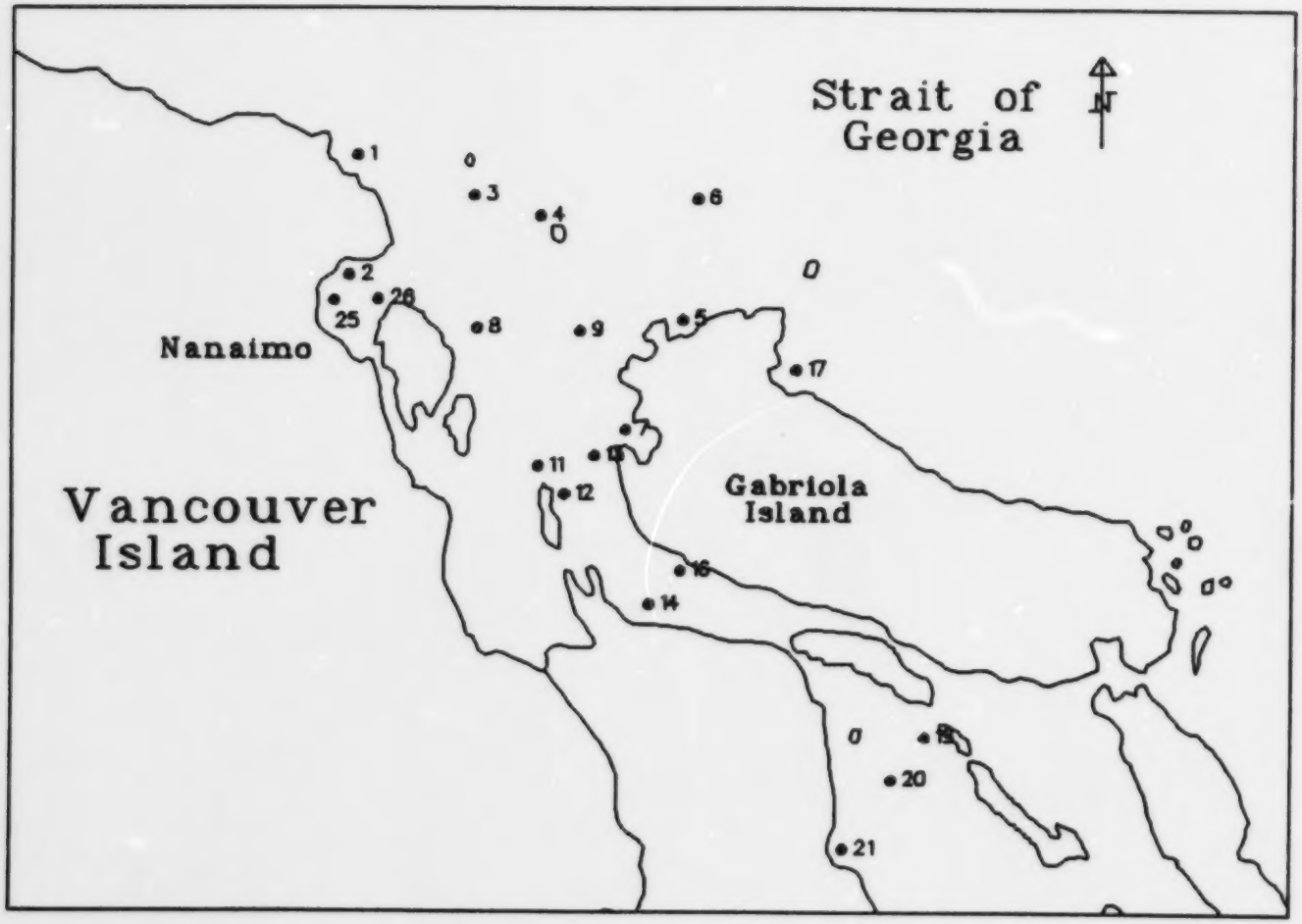
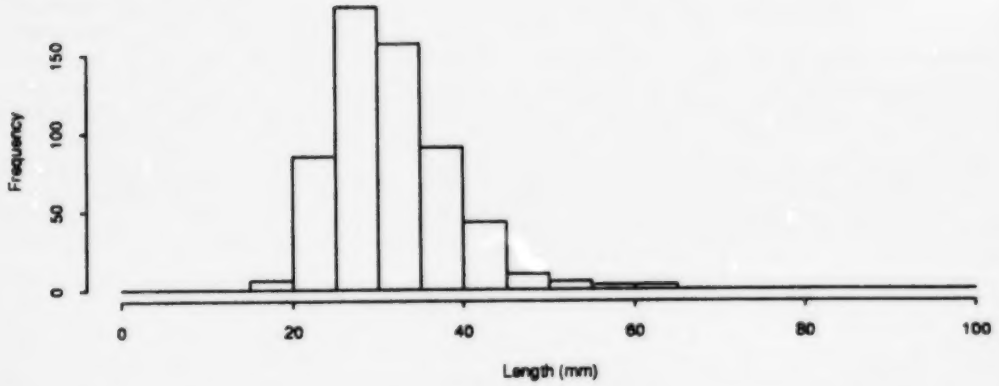

Strait of Georgia
N
Nanaimo
Vancouver Island
Gabriola Island
1
2
3
4
5
6
8
9
11
12
14
16
17
20
21
25
26

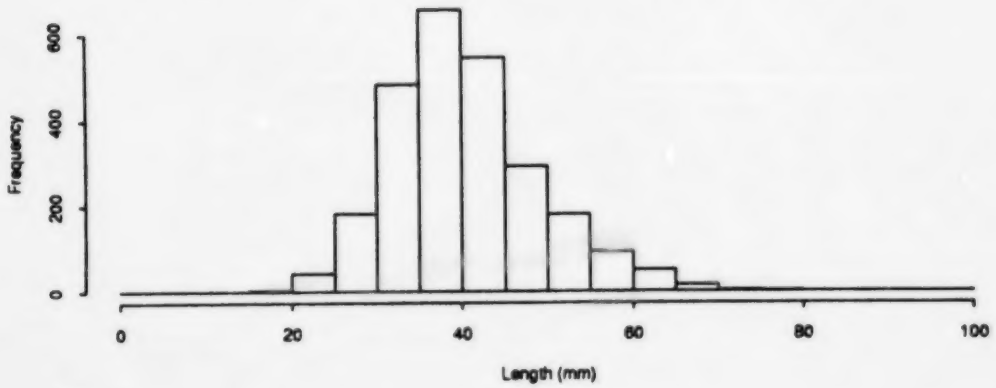
Figure 1

Figure 2. Length-frequency distributions of post-larval lingcod sampled during the May 1980 purse-seine surveys. Sample sizes are 437, 2551, and 1563 lingcod for the three consequtive sampling periods.

May 1-8, 1980




May 13-17, 1980




May 21-28, 1980

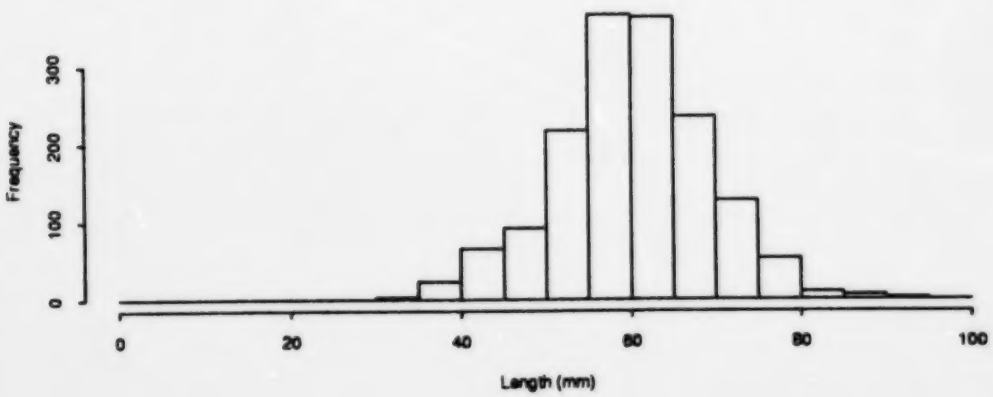
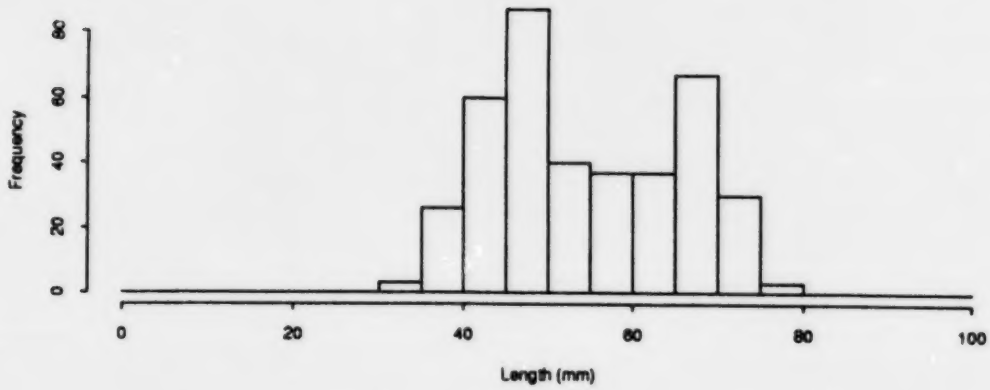


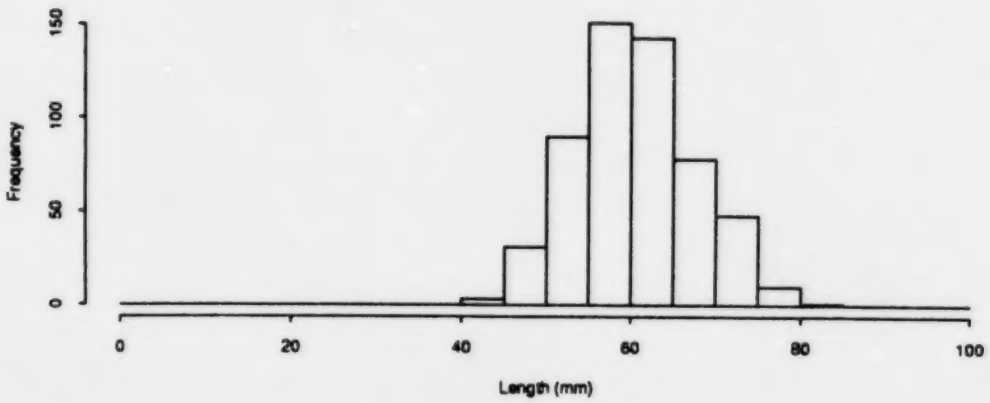

Figure 2

Figure 3. Length-frequency distributions of post-larval lingcod sampled during the May 1989 purse-seine surveys. Sample sizes are 390, 555, and 144 lingcod for the three consequtive sampling periods.

May 8-12, 1989




May 15-19, 1989




May 23-25, 1989

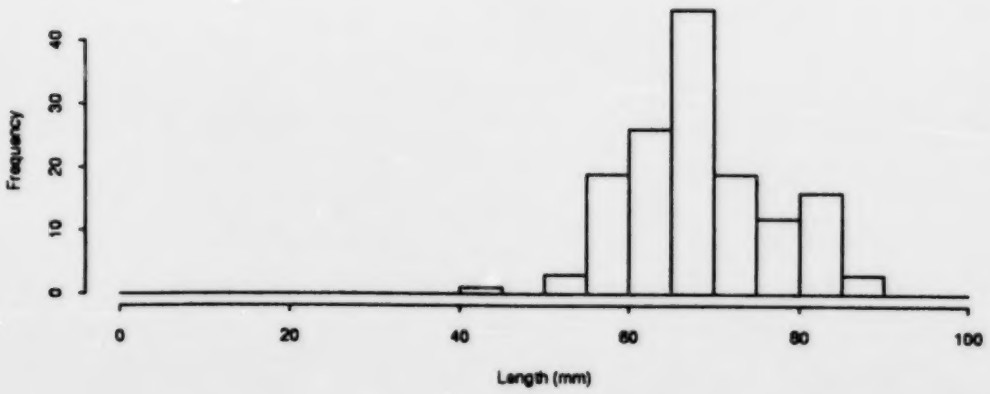
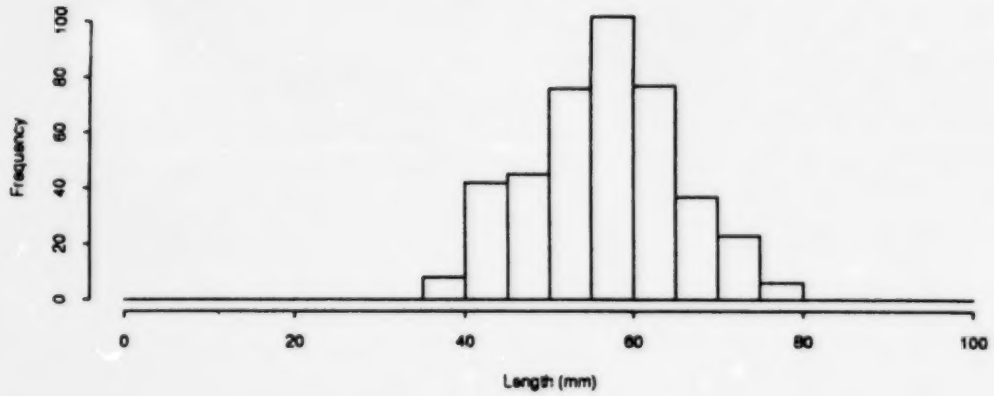


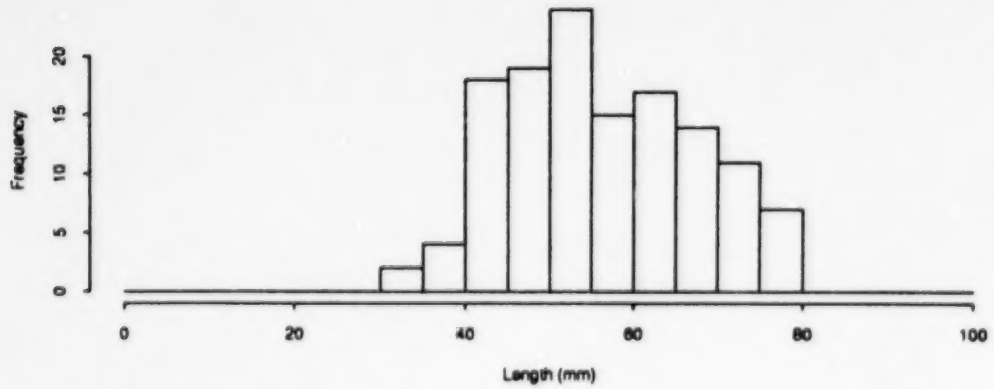

**Figure 3**

Figure 4. Length-frequency distributions of post-larval lingcod sampled during the May 1990 purse-seine surveys. Sample sizes are 482, 133, and 32 lingcod for the three consequtive sampling periods.

May 7-14, 1990




May 14-18, 1990




May 21-25, 1990

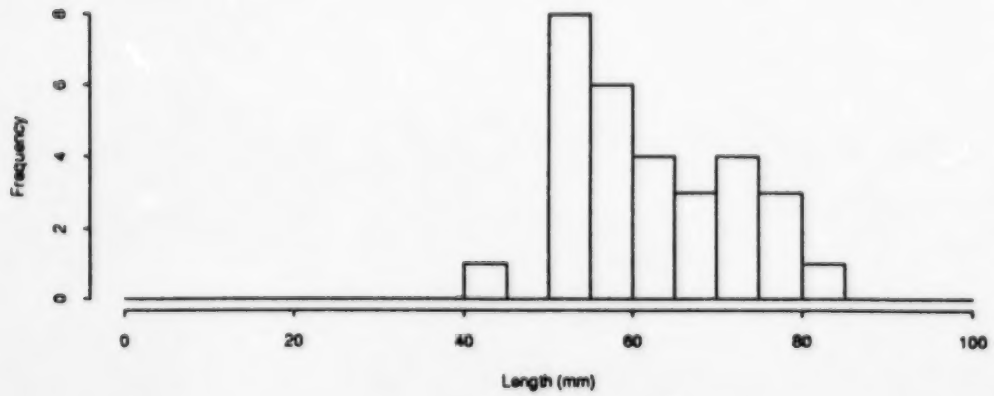



**Figure 4**

Appendix Table 1. Date, site number, length, and frequency of post-larval lingcod of that length in the purse-seine catch.

| Date | Site | Len | Freq |
|---|---|---|---|
| 890508 | 11 | 58 | 1 |
| 890508 | 11 | 59 | 1 |
| 890508 | 11 | 60 | 2 |
| 890508 | 11 | 62 | 1 |
| 890508 | 11 | 63 | 1 |
| 890508 | 11 | 64 | 2 |
| 890508 | 11 | 65 | 5 |
| 890508 | 11 | 66 | 2 |
| 890508 | 11 | 67 | 3 |
| 890508 | 11 | 68 | 3 |
| 890508 | 11 | 69 | 1 |
| 890508 | 11 | 70 | 3 |
| 890508 | 11 | 72 | 1 |
| 890508 | 11 | 73 | 1 |
| 890508 | 11 | 74 | 1 |
| 890508 | 11 | 75 | 1 |
| 890508 | 11 | 76 | 1 |
| 890508 | 14 | 54 | 1 |
| 890508 | 14 | 55 | 1 |
| 890508 | 14 | 57 | 1 |
| 890508 | 14 | 60 | 1 |
| 890508 | 14 | 61 | 1 |
| 890508 | 14 | 62 | 2 |
| 890508 | 14 | 63 | 1 |
| 890508 | 14 | 64 | 1 |
| 890508 | 14 | 65 | 1 |
| 890508 | 14 | 67 | 2 |
| 890508 | 14 | 68 | 1 |
| 890508 | 14 | 70 | 1 |
| 890508 | 14 | 72 | 1 |
| 890508 | 14 | 75 | 1 |
| 890509 | 17 | 40 | 2 |
| 890509 | 17 | 41 | 1 |
| 890509 | 17 | 47 | 2 |
| 890509 | 17 | 48 | 1 |
| 890509 | 17 | 49 | 1 |
| 890509 | 17 | 50 | 3 |
| 890509 | 17 | 54 | 1 |
| 890509 | 17 | 56 | 1 |
| 890509 | 17 | 57 | 1 |
| 890509 | 17 | 60 | 1 |
| 890510 | 26 | 38 | 1 |
| 890510 | 26 | 42 | 1 |
| 890511 | 2 | 59 | 1 |
| 890511 | 2 | 60 | 2 |
| 890511 | 2 | 61 | 1 |
| 890511 | 2 | 62 | 1 |
| 890511 | 2 | 63 | 2 |
| 890511 | 2 | 64 | 2 |
| 890511 | 2 | 65 | 3 |
| 890511 | 2 | 66 | 4 |
| 890511 | 2 | 67 | 4 |
| 890511 | 2 | 68 | 4 |
| 890511 | 2 | 69 | 4 |
| 890511 | 2 | 70 | 8 |
| 890511 | 2 | 71 | 5 |
| 890511 | 2 | 72 | 4 |
| 890511 | 2 | 73 | 3 |
| 890511 | 2 | 74 | 1 |
| 890511 | 2 | 75 | 2 |
| 890511 | 2 | 76 | 1 |
| 890511 | 2 | 78 | 1 |
| 890511 | 4 | 35 | 1 |
| 890511 | 4 | 40 | 1 |
| 890511 | 4 | 41 | 1 |
| 890511 | 4 | 42 | 1 |
| 890511 | 4 | 44 | 1 |
| 890511 | 4 | 45 | 1 |
| 890511 | 4 | 46 | 1 |
| 890511 | 4 | 47 | 3 |
| 890511 | 4 | 48 | 2 |
| 890511 | 4 | 50 | 1 |
| 890511 | 4 | 51 | 1 |
| 890511 | 4 | 54 | 1 |
| 890511 | 4 | 55 | 1 |
| 890511 | 4 | 56 | 1 |
| 890511 | 4 | 65 | 1 |
| 890511 | 5 | 40 | 2 |
| 890511 | 5 | 41 | 3 |
| 890511 | 5 | 42 | 1 |
| 890511 | 5 | 43 | 1 |
| 890511 | 5 | 44 | 2 |
| 890511 | 5 | 45 | 9 |
| 890511 | 5 | 46 | 7 |
| 890511 | 5 | 47 | 8 |
| 890511 | 5 | 48 | 5 |
| 890511 | 5 | 49 | 8 |
| 890511 | 5 | 50 | 6 |
| 890511 | 5 | 51 | 6 |
| 890511 | 5 | 52 | 3 |
| 890511 | 5 | 53 | 4 |
| 890511 | 5 | 54 | 2 |
| 890511 | 5 | 55 | 3 |
| 890511 | 5 | 56 | 4 |
| 890511 | 5 | 57 | 4 |
| 890511 | 5 | 58 | 5 |
| 890511 | 5 | 59 | 1 |
| 890511 | 5 | 60 | 1 |
| 890511 | 5 | 65 | 1 |
| 890511 | 5 | 66 | 1 |
| 890511 | 7 | 69 | 1 |
| 890511 | 7 | 72 | 1 |
| 890511 | 7 | 75 | 1 |
| 890511 | 9 | 34 | 1 |
| 890511 | 9 | 35 | 1 |
| 890511 | 9 | 37 | 5 |
| 890511 | 9 | 38 | 2 |
| 890511 | 9 | 39 | 4 |
| 890511 | 9 | 40 | 9 |
| 890511 | 9 | 41 | 11 |
| 890511 | 9 | 42 | 6 |
| 890511 | 9 | 43 | 6 |
| 890511 | 9 | 44 | 8 |
| 890511 | 9 | 45 | 7 |
| 890511 | 9 | 46 | 13 |
| 890511 | 9 | 47 | 6 |
| 890511 | 9 | 48 | 7 |
| 890511 | 9 | 49 | 9 |
| 890511 | 9 | 50 | 4 |
| 890511 | 9 | 51 | 6 |
| 890511 | 9 | 52 | 4 |
| 890511 | 9 | 53 | 1 |
| 890511 | 9 | 54 | 2 |
| 890511 | 9 | 55 | 2 |
| 890511 | 9 | 56 | 3 |
| 890511 | 9 | 58 | 1 |
| 890511 | 9 | 60 | 1 |
| 890511 | 9 | 65 | 1 |
| 890511 | 25 | 54 | 1 |
| 890511 | 25 | 57 | 1 |
| 890511 | 25 | 60 | 2 |
| 890511 | 25 | 62 | 1 |
| 890511 | 25 | 63 | 2 |
| 890511 | 25 | 64 | 3 |
| 890511 | 25 | 65 | 2 |
| 890511 | 25 | 66 | 1 |
| 890511 | 25 | 67 | 6 |
| 890511 | 25 | 68 | 4 |
| 890511 | 25 | 69 | 3 |
| 890511 | 25 | 70 | 6 |
| 890511 | 25 | 71 | 3 |
| 890511 | 25 | 73 | 2 |
| 890512 | 13 | 73 | 1 |
| 890512 | 19 | 56 | 1 |
| 890512 | 19 | 61 | 1 |
| 890512 | 19 | 64 | 1 |
| 890512 | 19 | 67 | 1 |
| 890512 | 19 | 68 | 1 |
| 890512 | 19 | 69 | 1 |
| 890512 | 19 | 70 | 2 |
| 890512 | 19 | 73 | 1 |
| 890515 | 11 | 46 | 1 |
| 890515 | 11 | 56 | 1 |
| 890515 | 11 | 58 | 2 |
| 890515 | 11 | 59 | 3 |
| 890515 | 11 | 60 | 1 |
| 890515 | 11 | 61 | 1 |
| 890515 | 11 | 62 | 1 |
| 890515 | 11 | 63 | 4 |
| 890515 | 11 | 64 | 3 |
| 890515 | 11 | 65 | 5 |
| 890515 | 11 | 66 | 3 |
| 890515 | 11 | 67 | 3 |
| 890515 | 11 | 68 | 2 |
| 890515 | 11 | 69 | 1 |
| 890515 | 11 | 70 | 5 |
| 890515 | 11 | 71 | 3 |
| 890515 | 11 | 72 | 6 |

Appendix Table 1 (cont.). Date, site number, length, and frequency of post-larval lingcod of that length in the purse-seine catch.

| Date | Site | Len | Freq | Date | Site | Len | Freq | Date | Site | Len | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 890515 | 11 | 73 | 4 | 890516 | 8 | 59 | 11 | 890518 | 6 | 66 | 1 |
| 890515 | 11 | 74 | 3 | 890516 | 8 | 60 | 10 | 890518 | 6 | 68 | 2 |
| 890515 | 11 | 75 | 1 | 890516 | 8 | 61 | 9 | 890518 | 6 | 70 | 1 |
| 890515 | 11 | 77 | 2 | 890516 | 8 | 62 | 8 | 890518 | 6 | 71 | 1 |
| 890515 | 11 | 78 | 1 | 890516 | 8 | 63 | 4 | 890518 | 6 | 76 | 1 |
| 890515 | 16 | 62 | 1 | 890516 | 8 | 64 | 14 | 890518 | 7 | 64 | 1 |
| 890515 | 16 | 63 | 1 | 890516 | 8 | 65 | 4 | 890518 | 7 | 72 | 1 |
| 890515 | 16 | 64 | 1 | 890516 | 8 | 66 | 5 | 890518 | 9 | 62 | 1 |
| 890516 | 1 | 48 | 1 | 890516 | 8 | 67 | 2 | 890518 | 9 | 65 | 1 |
| 890516 | 1 | 51 | 1 | 890516 | 8 | 68 | 4 | 890518 | 12 | 52 | 1 |
| 890516 | 1 | 54 | 1 | 890516 | 8 | 70 | 1 | 890518 | 12 | 59 | 1 |
| 890516 | 1 | 55 | 3 | 890516 | 8 | 71 | 2 | 890518 | 12 | 61 | 1 |
| 890516 | 1 | 56 | 1 | 890516 | 8 | 72 | 1 | 890518 | 12 | 64 | 1 |
| 890516 | 1 | 57 | 1 | 890516 | 8 | 73 | 1 | 890518 | 12 | 72 | 1 |
| 890516 | 1 | 58 | 2 | 890516 | 8 | 74 | 2 | 890518 | 13 | 61 | 3 |
| 890516 | 1 | 60 | 3 | 890516 | 8 | 75 | 1 | 890518 | 13 | 65 | 1 |
| 890516 | 1 | 61 | 2 | 890516 | 17 | 50 | 1 | 890518 | 13 | 68 | 1 |
| 890516 | 1 | 65 | 2 | 890516 | 17 | 52 | 1 | 890518 | 19 | 56 | 1 |
| 890516 | 3 | 45 | 1 | 890516 | 17 | 53 | 3 | 890518 | 19 | 60 | 1 |
| 890516 | 3 | 48 | 4 | 890516 | 17 | 54 | 2 | 890518 | 19 | 68 | 1 |
| 890516 | 3 | 49 | 7 | 890516 | 17 | 55 | 3 | 890518 | 19 | 70 | 1 |
| 890516 | 3 | 50 | 10 | 890516 | 17 | 56 | 3 | 890518 | 20 | 53 | 1 |
| 890516 | 3 | 51 | 6 | 890516 | 17 | 57 | 1 | 890518 | 20 | 57 | 2 |
| 890516 | 3 | 52 | 8 | 890516 | 17 | 58 | 1 | 890518 | 20 | 59 | 1 |
| 890516 | 3 | 53 | 7 | 890516 | 17 | 59 | 2 | 890518 | 20 | 60 | 1 |
| 890516 | 3 | 54 | 10 | 890516 | 17 | 60 | 6 | 890518 | 20 | 62 | 3 |
| 890516 | 3 | 55 | 10 | 890516 | 17 | 61 | 5 | 890518 | 20 | 65 | 1 |
| 890516 | 3 | 56 | 12 | 890516 | 17 | 62 | 7 | 890518 | 20 | 74 | 1 |
| 890516 | 3 | 57 | 8 | 890516 | 17 | 63 | 1 | 890519 | 2 | 55 | 1 |
| 890516 | 3 | 58 | 10 | 890516 | 17 | 64 | 4 | 890519 | 2 | 56 | 1 |
| 890516 | 3 | 59 | 11 | 890516 | 17 | 65 | 1 | 890519 | 2 | 58 | 1 |
| 890516 | 3 | 60 | 10 | 890516 | 17 | 66 | 2 | 890519 | 2 | 59 | 2 |
| 890516 | 3 | 61 | 6 | 890516 | 17 | 68 | 3 | 890519 | 2 | 60 | 1 |
| 890516 | 3 | 62 | 5 | 890516 | 17 | 78 | 1 | 890519 | 2 | 61 | 2 |
| 890516 | 3 | 63 | 3 | 890517 | 5 | 54 | 1 | 890519 | 2 | 62 | 7 |
| 890516 | 3 | 64 | 5 | 890517 | 5 | 61 | 1 | 890519 | 2 | 63 | 1 |
| 890516 | 3 | 65 | 1 | 890517 | 5 | 63 | 2 | 890519 | 2 | 64 | 4 |
| 890516 | 3 | 66 | 3 | 890517 | 5 | 65 | 2 | 890519 | 2 | 65 | 11 |
| 890516 | 3 | 67 | 1 | 890517 | 5 | 69 | 1 | 890519 | 2 | 66 | 8 |
| 890516 | 3 | 70 | 1 | 890517 | 5 | 70 | 2 | 890519 | 2 | 67 | 3 |
| 890516 | 3 | 71 | 1 | 890517 | 5 | 71 | 1 | 890519 | 2 | 68 | 6 |
| 890516 | 3 | 75 | 1 | 890517 | 25 | 59 | 1 | 890519 | 2 | 69 | 6 |
| 890516 | 4 | 43 | 1 | 890517 | 25 | 66 | 1 | 890519 | 2 | 70 | 6 |
| 890516 | 4 | 51 | 1 | 890517 | 25 | 70 | 1 | 890519 | 2 | 71 | 5 |
| 890516 | 4 | 53 | 1 | 890518 | 6 | 44 | 1 | 890519 | 2 | 72 | 2 |
| 890516 | 4 | 55 | 2 | 890518 | 6 | 47 | 1 | 890519 | 2 | 73 | 2 |
| 890516 | 4 | 57 | 1 | 890518 | 6 | 49 | 2 | 890519 | 2 | 74 | 2 |
| 890516 | 4 | 60 | 1 | 890518 | 6 | 50 | 3 | 890519 | 2 | 75 | 6 |
| 890516 | 8 | 48 | 1 | 890518 | 6 | 52 | 1 | 890519 | 2 | 76 | 1 |
| 890516 | 8 | 52 | 1 | 890518 | 6 | 53 | 2 | 890519 | 2 | 77 | 2 |
| 890516 | 8 | 53 | 5 | 890518 | 6 | 55 | 1 | 890519 | 2 | 78 | 1 |
| 890516 | 8 | 54 | 9 | 890518 | 6 | 56 | 1 | 890519 | 2 | 80 | 1 |
| 890516 | 8 | 55 | 8 | 890518 | 6 | 58 | 2 | 890519 | 2 | 81 | 1 |
| 890516 | 8 | 56 | 16 | 890518 | 6 | 59 | 1 | 890519 | 26 | 66 | 1 |
| 890516 | 8 | 57 | 11 | 890518 | 6 | 61 | 1 | 890523 | 5 | 68 | 1 |
| 890516 | 8 | 58 | 6 | 890518 | 6 | 62 | 1 | 890523 | 17 | 58 | 1 |

Appendix Table 1 (cont.). Date, site number, length, and frequency of post-larval lingcod of that length in the purse-seine catch.

| Date | Site | Len | Freq | Date | Site | Len | Freq | Date | Site | Len | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 890523 | 17 | 61 | 1 | 890525 | 2 | 86 | 3 | 900508 | 4 | 51 | 1 |
| 890523 | 17 | 63 | 2 | 890525 | 3 | 60 | 1 | 900508 | 4 | 55 | 1 |
| 890523 | 17 | 67 | 1 | 890525 | 7 | 55 | 1 | 900508 | 4 | 56 | 2 |
| 890523 | 17 | 70 | 1 | 890525 | 7 | 58 | 1 | 900508 | 4 | 58 | 1 |
| 890523 | 21 | 57 | 1 | 890525 | 7 | 59 | 1 | 900508 | 4 | 59 | 2 |
| 890523 | 21 | 59 | 1 | 890525 | 7 | 60 | 2 | 900508 | 4 | 60 | 2 |
| 890523 | 21 | 61 | 2 | 890525 | 7 | 61 | 1 | 900508 | 4 | 61 | 2 |
| 890523 | 21 | 62 | 1 | 890525 | 7 | 62 | 1 | 900508 | 8 | 49 | 1 |
| 890523 | 21 | 65 | 1 | 890525 | 7 | 63 | 1 | 900508 | 8 | 51 | 1 |
| 890523 | 21 | 66 | 1 | 890525 | 7 | 64 | 1 | 900508 | 8 | 52 | 3 |
| 890523 | 21 | 68 | 1 | 890525 | 7 | 65 | 1 | 900508 | 8 | 53 | 4 |
| 890524 | 1 | 58 | 1 | 890525 | 7 | 67 | 2 | 900508 | 8 | 54 | 3 |
| 890524 | 1 | 66 | 1 | 890525 | 7 | 68 | 1 | 900508 | 8 | 55 | 3 |
| 890524 | 3 | 62 | 1 | 890525 | 7 | 69 | 3 | 900508 | 8 | 56 | 6 |
| 890524 | 3 | 65 | 1 | 890525 | 7 | 70 | 3 | 900508 | 8 | 57 | 6 |
| 890524 | 3 | 67 | 2 | 890525 | 7 | 71 | 1 | 900508 | 8 | 58 | 3 |
| 890524 | 3 | 68 | 1 | 890525 | 7 | 72 | 3 | 900508 | 8 | 59 | 5 |
| 890524 | 3 | 70 | 1 | 890525 | 7 | 73 | 1 | 900508 | 8 | 60 | 4 |
| 890524 | 3 | 71 | 1 | 890525 | 7 | 75 | 1 | 900508 | 8 | 61 | 5 |
| 890524 | 4 | 55 | 1 | 890525 | 13 | 61 | 1 | 900508 | 8 | 62 | 3 |
| 890524 | 4 | 62 | 1 | 890525 | 13 | 62 | 1 | 900508 | 8 | 63 | 5 |
| 890524 | 4 | 68 | 1 | 890525 | 13 | 66 | 1 | 900508 | 8 | 64 | 4 |
| 890524 | 9 | 61 | 1 | 890525 | 13 | 67 | 1 | 900508 | 8 | 65 | 5 |
| 890524 | 11 | 45 | 1 | 890525 | 13 | 69 | 1 | 900508 | 8 | 67 | 1 |
| 890524 | 11 | 58 | 1 | 890525 | 25 | 58 | 1 | 900508 | 8 | 68 | 1 |
| 890524 | 11 | 60 | 1 | 890525 | 25 | 60 | 1 | 900509 | 16 | 39 | 2 |
| 890524 | 11 | 65 | 1 | 890525 | 25 | 61 | 1 | 900509 | 16 | 46 | 1 |
| 890524 | 11 | 66 | 1 | 890525 | 25 | 63 | 1 | 900509 | 16 | 50 | 1 |
| 890524 | 14 | 57 | 1 | 890525 | 25 | 65 | 1 | 900509 | 16 | 53 | 1 |
| 890524 | 14 | 59 | 1 | 890525 | 25 | 67 | 2 | 900509 | 16 | 54 | 3 |
| 890524 | 14 | 60 | 1 | 890525 | 25 | 68 | 3 | 900509 | 16 | 55 | 1 |
| 890524 | 14 | 65 | 1 | 890525 | 25 | 69 | 3 | 900509 | 16 | 56 | 1 |
| 890524 | 14 | 67 | 1 | 890525 | 25 | 70 | 1 | 900509 | 16 | 57 | 4 |
| 890524 | 14 | 69 | 1 | 890525 | 25 | 71 | 2 | 900509 | 16 | 58 | 4 |
| 890524 | 16 | 54 | 1 | 890525 | 25 | 73 | 1 | 900509 | 16 | 59 | 1 |
| 890524 | 16 | 57 | 1 | 890525 | 25 | 75 | 1 | 900509 | 16 | 61 | 1 |
| 890524 | 16 | 58 | 1 | 890525 | 25 | 77 | 2 | 900509 | 16 | 62 | 1 |
| 890524 | 16 | 60 | 1 | 890525 | 26 | 65 | 1 | 900509 | 16 | 65 | 1 |
| 890524 | 16 | 61 | 1 | 890525 | 26 | 67 | 1 | 900509 | 16 | 66 | 1 |
| 890525 | 2 | 65 | 1 | 890525 | 26 | 68 | 3 | 900509 | 17 | 41 | 3 |
| 890525 | 2 | 66 | 1 | 890525 | 26 | 69 | 1 | 900509 | 17 | 42 | 4 |
| 890525 | 2 | 68 | 1 | 890525 | 26 | 70 | 2 | 900509 | 17 | 43 | 6 |
| 890525 | 2 | 70 | 1 | 890525 | 26 | 71 | 1 | 900509 | 17 | 44 | 3 |
| 890525 | 2 | 72 | 2 | 890525 | 26 | 72 | 2 | 900509 | 17 | 45 | 7 |
| 890525 | 2 | 73 | 1 | 890525 | 26 | 76 | 1 | 900509 | 17 | 46 | 4 |
| 890525 | 2 | 75 | 2 | 900508 | 1 | 51 | 1 | 900509 | 17 | 48 | 6 |
| 890525 | 2 | 76 | 1 | 900508 | 1 | 54 | 1 | 900509 | 17 | 49 | 4 |
| 890525 | 2 | 77 | 1 | 900508 | 1 | 57 | 5 | 900509 | 17 | 50 | 7 |
| 890525 | 2 | 78 | 3 | 900508 | 1 | 58 | 1 | 900509 | 17 | 51 | 4 |
| 890525 | 2 | 79 | 2 | 900508 | 1 | 73 | 1 | 900509 | 17 | 52 | 8 |
| 890525 | 2 | 80 | 2 | 900508 | 4 | 39 | 1 | 900509 | 17 | 53 | 10 |
| 890525 | 2 | 81 | 5 | 900508 | 4 | 44 | 1 | 900509 | 17 | 54 | 10 |
| 890525 | 2 | 82 | 3 | 900508 | 4 | 45 | 2 | 900509 | 17 | 55 | 10 |
| 890525 | 2 | 83 | 6 | 900508 | 4 | 47 | 1 | 900509 | 17 | 56 | 5 |
| 890525 | 2 | 84 | 1 | 900508 | 4 | 49 | 2 | 900509 | 17 | 57 | 5 |
| 890525 | 2 | 85 | 1 | 900508 | 4 | 50 | 2 | 900509 | 17 | 58 | 7 |

Appendix Table 1 (cont.). Date, site number, length, and frequency of post-larval lingcod of that length in the purse-seine catch.

| Date | Site | Len | Freq | Date | Site | Len | Freq | Date | Site | Len | Freq |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 900509 | 17 | 59 | 6 | 900511 | 9 | 49 | 1 | 900515 | 4 | 64 | 1 |
| 900509 | 17 | 60 | 3 | 900511 | 9 | 50 | 2 | 900515 | 4 | 65 | 2 |
| 900509 | 17 | 61 | 3 | 900511 | 9 | 51 | 1 | 900515 | 4 | 70 | 1 |
| 900509 | 17 | 62 | 2 | 900511 | 9 | 52 | 1 | 900515 | 4 | 72 | 1 |
| 900509 | 17 | 63 | 4 | 900511 | 9 | 53 | 2 | 900515 | 4 | 79 | 1 |
| 900509 | 17 | 64 | 1 | 900511 | 9 | 54 | 1 | 900515 | 5 | 39 | 2 |
| 900509 | 17 | 68 | 1 | 900511 | 9 | 55 | 1 | 900515 | 5 | 43 | 1 |
| 900509 | 17 | 72 | 1 | 900511 | 9 | 56 | 1 | 900515 | 8 | 51 | 1 |
| 900509 | 17 | 74 | 1 | 900511 | 9 | 57 | 2 | 900515 | 8 | 58 | 1 |
| 900509 | 25 | 41 | 1 | 900511 | 9 | 58 | 5 | 900515 | 8 | 60 | 2 |
| 900509 | 25 | 43 | 1 | 900511 | 9 | 59 | 4 | 900515 | 8 | 62 | 1 |
| 900509 | 25 | 54 | 1 | 900511 | 9 | 60 | 4 | 900515 | 8 | 63 | 2 |
| 900511 | 3 | 36 | 1 | 900511 | 9 | 61 | 5 | 900515 | 8 | 66 | 1 |
| 900511 | 3 | 37 | 1 | 900511 | 9 | 62 | 9 | 900515 | 8 | 67 | 1 |
| 900511 | 3 | 38 | 1 | 900511 | 9 | 63 | 5 | 900515 | 8 | 68 | 1 |
| 900511 | 3 | 40 | 2 | 900511 | 9 | 64 | 3 | 900515 | 17 | 40 | 1 |
| 900511 | 3 | 41 | 4 | 900511 | 9 | 65 | 3 | 900515 | 17 | 41 | 1 |
| 900511 | 3 | 42 | 2 | 900511 | 9 | 66 | 3 | 900515 | 17 | 42 | 1 |
| 900511 | 3 | 43 | 2 | 900511 | 9 | 67 | 2 | 900515 | 17 | 43 | 2 |
| 900511 | 3 | 45 | 3 | 900511 | 9 | 68 | 2 | 900515 | 17 | 44 | 3 |
| 900511 | 3 | 46 | 2 | 900511 | 9 | 69 | 2 | 900515 | 17 | 45 | 1 |
| 900511 | 3 | 47 | 2 | 900511 | 9 | 70 | 4 | 900515 | 17 | 52 | 2 |
| 900511 | 3 | 48 | 2 | 900511 | 9 | 71 | 1 | 900515 | 17 | 55 | 1 |
| 900511 | 3 | 49 | 2 | 900511 | 9 | 72 | 1 | 900515 | 17 | 58 | 1 |
| 900511 | 3 | 50 | 3 | 900511 | 9 | 76 | 1 | 900515 | 17 | 60 | 1 |
| 900511 | 3 | 51 | 1 | 900511 | 11 | 57 | 1 | 900515 | 17 | 62 | 1 |
| 900511 | 3 | 53 | 1 | 900511 | 11 | 59 | 1 | 900516 | 9 | 52 | 1 |
| 900511 | 3 | 54 | 1 | 900511 | 11 | 61 | 1 | 900516 | 9 | 54 | 1 |
| 900511 | 3 | 55 | 1 | 900511 | 11 | 62 | 1 | 900516 | 9 | 55 | 1 |
| 900511 | 3 | 57 | 1 | 900511 | 11 | 66 | 2 | 900516 | 9 | 67 | 1 |
| 900511 | 7 | 47 | 1 | 900511 | 11 | 68 | 2 | 900516 | 12 | 50 | 1 |
| 900511 | 7 | 56 | 2 | 900511 | 11 | 69 | 2 | 900516 | 12 | 73 | 1 |
| 900511 | 7 | 57 | 1 | 900511 | 11 | 71 | 2 | 900516 | 12 | 79 | 1 |
| 900511 | 7 | 58 | 1 | 900511 | 11 | 73 | 1 | 900516 | 14 | 75 | 1 |
| 900511 | 7 | 59 | 3 | 900511 | 11 | 77 | 1 | 900517 | 11 | 48 | 1 |
| 900511 | 7 | 60 | 2 | 900511 | 11 | 79 | 1 | 900517 | 11 | 49 | 1 |
| 900511 | 7 | 61 | 2 | 900511 | 13 | 59 | 1 | 900517 | 11 | 54 | 2 |
| 900511 | 7 | 62 | 1 | 900511 | 13 | 69 | 1 | 900517 | 11 | 56 | 1 |
| 900511 | 7 | 63 | 2 | 900511 | 13 | 72 | 1 | 900517 | 11 | 61 | 1 |
| 900511 | 7 | 64 | 4 | 900511 | 13 | 73 | 1 | 900517 | 11 | 66 | 1 |
| 900511 | 7 | 65 | 4 | 900511 | 13 | 74 | 1 | 900517 | 11 | 69 | 1 |
| 900511 | 7 | 66 | 1 | 900511 | 26 | 67 | 1 | 900517 | 11 | 70 | 1 |
| 900511 | 7 | 67 | 2 | 900511 | 26 | 68 | 1 | 900517 | 11 | 73 | 1 |
| 900511 | 7 | 68 | 4 | 900511 | 26 | 71 | 1 | 900517 | 13 | 49 | 1 |
| 900511 | 7 | 69 | 2 | 900511 | 26 | 79 | 1 | 900517 | 13 | 64 | 1 |
| 900511 | 7 | 70 | 2 | 900514 | 19 | 47 | 1 | 900517 | 13 | 74 | 2 |
| 900511 | 7 | 71 | 3 | 900514 | 19 | 54 | 2 | 900517 | 13 | 75 | 1 |
| 900511 | 7 | 72 | 1 | 900514 | 19 | 58 | 1 | 900517 | 13 | 77 | 3 |
| 900511 | 7 | 73 | 2 | 900514 | 19 | 61 | 1 | 900517 | 13 | 78 | 1 |
| 900511 | 7 | 74 | 3 | 900515 | 1 | 66 | 1 | 900517 | 21 | 49 | 1 |
| 900511 | 7 | 75 | 2 | 900515 | 1 | 72 | 1 | 900517 | 21 | 53 | 1 |
| 900511 | 7 | 76 | 2 | 900515 | 1 | 73 | 1 | 900517 | 21 | 58 | 2 |
| 900511 | 9 | 42 | 1 | 900515 | 4 | 48 | 1 | 900517 | 21 | 63 | 1 |
| 900511 | 9 | 44 | 1 | 900515 | 4 | 52 | 1 | 900518 | 3 | 35 | 1 |
| 900511 | 9 | 45 | 1 | 900515 | 4 | 56 | 1 | 900518 | 3 | 38 | 1 |
| 900511 | 9 | 46 | 1 | 900515 | 4 | 59 | 1 | 900518 | 3 | 41 | 1 |

Appendix Table 1 (cont.). Date, site number, length, and frequency of post-larval lingcod of that length in the purse-seine catch.

| Date | Site | Len | Freq | Date | Site | Len | Freq |
|---|---|---|---|---|---|---|---|
| 900518 | 3 | 43 | 1 | 900524 | 25 | 84 | 1 |
| 900518 | 3 | 44 | 4 | | | | |
| 900518 | 3 | 45 | 1 | | | | |
| 900518 | 3 | 46 | 3 | | | | |
| 900518 | 3 | 47 | 1 | | | | |
| 900518 | 3 | 49 | 5 | | | | |
| 900518 | 3 | 50 | 2 | | | | |
| 900518 | 3 | 51 | 3 | | | | |
| 900518 | 3 | 52 | 3 | | | | |
| 900518 | 3 | 53 | 2 | | | | |
| 900518 | 3 | 54 | 3 | | | | |
| 900518 | 3 | 56 | 3 | | | | |
| 900518 | 3 | 63 | 2 | | | | |
| 900518 | 7 | 33 | 1 | | | | |
| 900518 | 7 | 43 | 1 | | | | |
| 900518 | 7 | 44 | 1 | | | | |
| 900518 | 7 | 50 | 1 | | | | |
| 900518 | 7 | 61 | 1 | | | | |
| 900518 | 7 | 64 | 1 | | | | |
| 900518 | 7 | 70 | 1 | | | | |
| 900518 | 25 | 57 | 1 | | | | |
| 900518 | 25 | 66 | 1 | | | | |
| 900518 | 25 | 69 | 1 | | | | |
| 900518 | 25 | 71 | 1 | | | | |
| 900518 | 25 | 73 | 1 | | | | |
| 900518 | 26 | 61 | 1 | | | | |
| 900518 | 26 | 63 | 1 | | | | |
| 900518 | 26 | 67 | 1 | | | | |
| 900518 | 26 | 70 | 1 | | | | |
| 900518 | 26 | 76 | 1 | | | | |
| 900522 | 6 | 60 | 1 | | | | |
| 900522 | 8 | 58 | 1 | | | | |
| 900522 | 8 | 67 | 1 | | | | |
| 900522 | 14 | 80 | 1 | | | | |
| 900524 | 7 | 43 | 1 | | | | |
| 900524 | 7 | 53 | 2 | | | | |
| 900524 | 7 | 54 | 1 | | | | |
| 900524 | 7 | 55 | 2 | | | | |
| 900524 | 7 | 62 | 1 | | | | |
| 900524 | 7 | 63 | 1 | | | | |
| 900524 | 7 | 71 | 1 | | | | |
| 900524 | 7 | 79 | 1 | | | | |
| 900524 | 9 | 59 | 1 | | | | |
| 900524 | 9 | 66 | 1 | | | | |
| 900524 | 9 | 70 | 1 | | | | |
| 900524 | 9 | 72 | 1 | | | | |
| 900524 | 11 | 53 | 1 | | | | |
| 900524 | 11 | 55 | 1 | | | | |
| 900524 | 11 | 73 | 1 | | | | |
| 900524 | 11 | 80 | 1 | | | | |
| 900524 | 12 | 55 | 1 | | | | |
| 900524 | 12 | 57 | 2 | | | | |
| 900524 | 12 | 60 | 1 | | | | |
| 900524 | 12 | 63 | 1 | | | | |
| 900524 | 12 | 64 | 1 | | | | |
| 900524 | 25 | 75 | 1 | | | | |